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PROCEEDINGS OF SCIENTIFIC SOCIETIES.

The Biological Society of Washington.—The eleventh anniversary meeting was held in the lecture-room of the Columbian University, on Saturday evening, January 24th, at half-past eight o'clock. The retiring president, Professor Lester F. Ward, delivered an address entitled "Neo-Darwinism and Neo-Lamarckism," in which he took strong ground in favor of the latter doctrine.

February 7th, 1891.—Prof. H. F. Osborn read a paper entitled "A Review of the Cretaceous Mammalian Fauna of North America." It was in effect a review of a paper by Prof. O. C. Marsh upon this subject, in which six new families, sixteen new genera, and twenty-seven new species were described. He illustrated his remarks upon the blackboard, first giving a sketch of the differences between the trituberculate and multituberculate groups of mammals. He then examined in detail the species described as new by Professor Marsh, stating that in no case was more than a single tooth described, and in all cases this was stated to be the upper molar. He stated it as his belief that in numerous instances the teeth were in reality lower molars; and he showed by drawings how teeth referred to distinct species, genera, and even families, seemed to belong to one species. In one instance he mentioned four families, six genera, and seven different species that seemed to belong to one species.

One tooth which had been described as mammalian he thought probably was reptilian, though it was not possible to say positively until the lower part was known.

Professor Marsh was present, and replied to Professor Osborn, stating that he had seen all the specimens of Cretaceous and Jurassic mammals of Europe, and had most of those of Cretaceous age from America in his own collection. He differed *in toto* from Professor Osborn, and had specimens which showed Professor Osborn was entirely mistaken in his assertions. He defended his method of describing and illustrating a single tooth, believing it to be better to describe a single typical example, at least in a preliminary paper, rather than more than one not so perfect or typical. He believed the Cretaceous fauna to have been a large one, the mammals varying from one the size of a shrew to one as large as an opossum; and when he had leisure to describe and illustrate the thousand specimens he now had of Creta-

ceous Mammalia he was convinced the number of species would be increased rather than diminished.

In respect to the tooth considered possibly reptilian by Professor Osborn, he now had a specimen showing it to possess a double fang, so its mammalian character was established. He criticised the use of *Multituberculata* for a group of mammals, and defended the use of a term applied by himself some years previous to the establishment of the one used instead by the author of the paper.

Dr. Theodore Gill spoke in reference to nomenclature and the value of making priority of proposal of a name the established law in zoology. He believed the proposal of the name, when it was understood to what group or genus or species it was intended to be applied, was of more value than a strict definition. He cited several examples of defective definition; but where the animal to which the term had been applied was well known, he believed it should be recognized.—JOSEPH F. JAMES.

Indiana Academy of Science.—The sixth annual meeting was held at Indianapolis, December 30th and 31st, 1890. Officers and ex officio, Executive Committee of the Academy: T. C. Mendenhall, president; O. P. Hay, John L. Campbell, J. C. Arthur, vice presidents; Amos W. Butler, secretary; O. P. Jenkins, treasurer; D. S. Jordan, J. M. Coulter, J. P. D. John, J. C. Branner, ex-presidents. List of papers read:

Physics and Engineering.—A Set of Resistance Coils and Wheatstone's Bridge, J. P. Naylor; Transformer Tests, A. P. Carman; Note on the Magnetic Permeability of an Impure Nickel at Low Temperature, A. P. Carman; Freezing Process of Excavation, B. A. Lackey; A Brief Description of the New Steam Engineering Laboratory at Purdue University, W. F. M. Goss; A Refraction Rainbow, W. J. Spillman; President's Address—The Work of the U. S. Coast and Geodetic Survey, T. C. Mendenhall.

Chemistry.—Notes on Xylose, W. E. Stone; On Qualitative and Quantitative Reactions for Furfurol, W. E. Stone; On a Pentaglucoase Obtained from Corncocks, W. E. Stone and Dumont Lotz; Detection and Estimation of Titanium, W. A. Noyes; A New Method for Quantitative Determination of Albumen in Urine, F. C. VanNuys and R. F. Lyons; An Improved Chemical Test for Blood in Urine, R. F. Lyons; An Apparatus for Determination of Water in Oils and Fats, R. F. Lyons; Oxidation of Phosphoric Acid, H. A. Huston; Albuminoid Nitrogen in Indiana Feeding Material, H. A. Huston.

Geology.—A Recent Find of Musk Ox Remains in Indiana, Joseph Moore ; A Review of the Niagara Group in Bartholomew Co., Ind. (by title), J. F. Newsom ; Shelby County "Earthquake," J. F. Newsom ; Some New Crustacean Fossils, C. E. Newlin ; Geological Section at Vincennes, W. J. Spillman ; Sections of Drift in Vigo Co., Ind., J. T. Scovell ; The Highest Old Shore-line on Mackinac Island, F. B. Taylor ; The Effect of the Great Lakes on the Ice Sheet, F. B. Taylor.

Botany.—Preliminary Notes on Genus *Polygonum*, Stanley Coulter ; Aberrant Fruit of *Juglans nigra*, Stanley Coulter ; Aberrant Forms of *Juglans nigra*—Structural Changes, D. T. McDougal ; Value of Minute Anatomy in Plant Classification, Stanley Coulter ; Notes on the Apical Growth of Liverworts, David M. Mottier ; Notes on the Germination of Spores of *Notothylus* (by title), David M. Mottier ; A Remarkable Oscillating Movement of Protoplasm in a *Mucor*, J. C. Arthur ; Accelerating Germination by Previous Immersion of the Seed in Hot Water, J. C. Arthur ; Notes on Gautemalan Compositæ, Henry E. Seaton ; Parasitic Fungi of Indiana, E. M. Fisher ; Circulation of Sap, John Morgan ; Distribution of *Peucedanum* in North America, J. N. Rose ; Plants Collected by Dr. Palmer in Arizona in 1890, J. N. Rose ; Comparative Structure of the Roots of *Osmunda* and *Botrychium*, D. H. Campbell ; Notes on the Prothallium of the *Osmundaceæ*, D. H. Campbell ; Notes on a New *Puccineæ*, Henry L. Bolley ; On the Manufacture of Plant Infusions for the Culture of Bacteria, Henry L. Bolley ; The Occurrence of *Veratrum woodii* in Decatur, Ind., W. P. Shannon ; Some Features of the Occurrence of *Viola pedata* var. *bicolor*, Jos. H. Tudor ; Preliminary List of Knox County Plants, W. J. Spillman ; Introduction of Noxious Weeds, W. J. Spillman ; Biological Surveys, John M. Coulter ; The Flora of Texas, John M. Coulter ; Weight of the Seed in Relation to Production, Katherine E. Golden.

Zoology.—The Identification of Ghost-fishes, Chas. H. Gilbert ; The Deep-Water Fishes of the Pacific, Chas. H. Gilbert ; The Fishes of the Interior of Kentucky (by title), A. J. Woolman ; Notes on Indiana Reptiles, Amos W. Butler ; Observations on the Habits of *Synaptomys cooperii*, Amos W. Butler ; Chætodontidæ of the Sandwich Islands, O. P. Jenkins ; Notes on Structure of Muscle Cells in Salamanders, O. P. Jenkins ; Geophila in Jefferson County, Ind. (by title), Geo. C. Hubbard ; Notes on Some Actina, W. F. Glick ; Some Notes on Indiana Birds, B. W. Evermann ; Contribution to the Distribution of the Fishes of the West Coast of North America, O. P. Jenkins and B. W. Evermann ; Sailor Spiders on Lake Maxinkuckee, O. P. Jenkins ; The Butterflies of Indiana, W. S. Blatchley ; The Batrachians and Reptiles

of Vigo Co., Ind., W. S. Blatchley; The Death of Salmon After Spawning, D. S. Jordan; The Fishes of the Upper Columbia and the Shoshone Falls, D. S. Jordan; Eels of America and Europe (by title), D. S. Jordan and B. M. Davis; Food Habits of the Blue Jay, C. W. Hargitt; Notes on *Hydra fusca*, C. W. Hargitt; Acrididæ of Vigo Co., Ind., W. S. Blatchley; On a Bird New to the State Fauna, W. S. Blatchley; On *Cnicus discolor* as an Insect Trap, W. S. Blatchley; Relation of the Number of Vertebræ in Fishes to the Temperature of Water, D. S. Jordan; Notes on Indiana Mammals, B. W. Evermann and A. W. Butler; Audubon's Old Mill at Henderson, Ky., B. W. Evermann; The Range of the Evening Grosbeak in the Winter of 1889-'90, Amos W. Butler; Carolina Parakeet in Indiana, Amos W. Butler; The Colors of Sounds, Gustaf Kartsen; The Colors of Letters, D. S. Jordan; A List of the Orthoptera of Illinois, with descriptions of new species and observations on the songs and habits of little-known species (by title), Jerome McNeill; Description of a New Æsthesiometer, Wm. Bryan; Researches on the Tactual Perception of Distance, Wm. Bryan; Researches on Reaction Time, Wm. Bryan; Fishes of the Wabash Basin, B. W. Evermann and O. P. Jenkins; Hypnotism, W. B. Clarke.

Addenda.—Notes on Distribution and Habits of *Argynnis diana*, S. G. Evans; Exact and Approximate Formulæ for Calculating the Force at Any Point in the Plane of a Circular Circuit Conveying an Electric Current, Thomas Gray; Some Data as to the Resistance to Cutting of Metals, Thomas Gray; Description of a Powerful Electro-Magnet, with preliminary determination of its magnetic field, C. Leo Mees; Continuation of Experiments in the Change of Density of Metals Under Stress, C. Leo Mees; An Apparatus for Determining Strength of Electric Currents in Absolute Measure, Thomas Gray; Specimens of Diagrams Obtained in Testing Iron and Steel, Thomas Gray; The Relative Magnetic Resistance of Air and Iron, Thomas Gray; On the Solution of the Equation $du = \frac{dx}{(a^2 - x^2)^{1/2}}$ Thomas Gray.

The officers for next year are: President, O. P. Hay; vice presidents, J. L. Campbell, J. C. Arthur, W. A. Noyes; secretary, A. W. Butler; treasurer, O. P. Jenkins.

American Physiological Society.—The annual meeting of the American Physiological Society was held on December 30th, 1890, at the Harvard Medical School, Boston. The following papers were presented: On the Growth of Children, Studied by Galton's Method of Percentage Grades, H. P. Bowditch; A Contribution to Our

Knowledge of the So-called Poisonous Albumens, V. C. Vaughan ; Suggestions for the More Effective Advancement of Physiology, Through the American Physiological Society, T. W. Mills ; Further Observations in Regard to the Stimulation of Ganglion Cells, C. F. Hodge ; On the Vasomotor Nerves of the Heart, H. N. Martin ; On Muscle Fatigue, W. P. Lombard ; Reaction-time Apparatus, J. G. Curtis.

SCIENTIFIC NEWS.

The last legislature of Alabama made the annual appropriation for the geological survey, \$7,500, and continuous,—*i. e.*, till otherwise provided. This places it on a very desirable footing as to permanence, for there will be no effort to bring the survey to a close so long as the state continues to advance in the direction it is now going, and so long as we have anything to report upon. The amount of the appropriation is not so great as could have been wished, but a good deal can be done with it, especially as all engraving, printing, etc., come out of another fund. The survey, under Prof. Eugene Smith, is mapping the Warrior and Coosa coal fields.

Prof. Alpheus Hyatt has published an article in the February *Atlantic Monthly* entitled "The Next Stage in the Development of Public Parks." In this paper Prof. Hyatt advocates the establishment of zoological collections in our public parks, grouped in a way to be of use to the student of zoology. He also suggests the establishment of marine and fresh-water aquaria, and believes that not only fish, but marine animals, insects, water plants, etc., should be shown in them.